

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

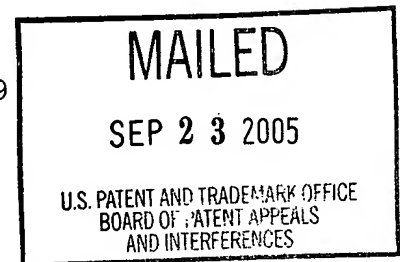
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHRISTOPHER J. LORD, KARL O. LILLEVOLD
and GIM L. DEISHER

Appeal No. 2005-2094
Application No. 09/448,679

ON BRIEF



Before KRASS, RUGGIERO and BARRY, Administrative Patent Judges.
KRASS, Administrative Patent Judge.

Decision On Appeal

This is a decision on appeal from the final rejection of claims 1-33.

The invention pertains to removal of noisy edges in video frames in order to achieve higher frame rates and better quality video.

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Representative independent claim 1 is reproduced as follows:

1. A method comprising:

receiving a video frame;

identifying noise in a first portion of the video frame; and

replacing the first portion with a second portion of the video frame.

The examiner relies on the following reference:

Lawlor et al. (Lawlor) 5,353,059 Oct. 4, 1994

Claims 1-11, 13, 14, and 16-32 stand rejected under
35 U.S.C. § 102(b) as anticipated by Lawlor.

Claims 12, 15, and 33 stand rejected under 35 U.S.C. § 103
as unpatentable over Lawlor.

Reference is made to the briefs and answer for the
respective positions of appellants and the examiner.

OPINION

Turning, first, to the rejection under 35 U.S.C. § 102(b),
and taking claim 1 as exemplary, the examiner asserts that Lawlor
teaches the claimed receipt of a video frame by the disclosed
input data element in Figure 11 and column 13, lines 36-56; that
Lawlor's threshold measurement and error flag analysis unit 640,
in Figures 11 and 15, and column 13, line 57 through column 14,
line 24, is a disclosure of the claimed identification of noise

in a first portion of the video frame; and that Lawlor's spatial replacement, involving replacing a corrupted data element by a single one of the surrounding elements selected according to a predetermined order of priority, in Figures 13-15, and column 15, line 4 through column 17, line 21, constitutes a teaching of the claimed replacement of the first portion with a second portion of the video frame.

A rejection for anticipation under section 102 requires that the four corners of a single prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation. In re Paulsen, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994).

We have reviewed the teachings of Lawlor, especially those portions specifically cited by the examiner, and, contrary to the examiner's view, we do not find the instant claimed subject matter disclosed therein.

Examining the claim language in detail, there is no question that Lawlor discloses a method whereby a video frame is received. Therefore, as to the first step of the instant claimed subject matter, we agree with the examiner.

The next step is an identification of noise in a first portion of the video frame. The examiner identifies column 13, line 57 through column 14, line 24, as a teaching of this claimed step. This portion of the reference discusses the substitution of an interpolated value for an existing value and the conditions necessary for the substitution to occur. However, we find nothing therein, or in any other portion of Lawlor, which discusses the identification of a "noise" signal, as required by each of the instant claims.

There is also nothing in Lawlor indicative of replacing a first portion of a video frame with a second portion of the video frame, as required by each of the instant claims. The examiner points us to column 15, line 4 through column 17, line 21, but we find nothing therein indicative of first and second portions of a video frame and substituting one for the other.

Lawlor does discuss a "frame replacement" (e.g., column 17, lines 32 et seq.) and its use for concealment of corrupted elements, but there is no indication that any one portion of a video frame is replaced with another portion of that video frame.

In response to appellants' arguments as to these points, the examiner attempts to define "noise," broadly, in accordance with dictionary definitions, as "Unwanted disturbances superimposed

upon a useful signal, which tend to obscure its information content" (answer-page 11). The examiner then uses Lawlor's disclosure of "dirt particles" (column 1, line 13) as corrupting data in an analogy to noise since these dirt particles will cause "unwanted disturbances..." Thus, the examiner contends that the disclosed dirt particles will introduce "noise," as claimed.

For argument's sake, we will assume that the examiner is, broadly speaking, correct in identifying the errors in Lawlor as constituting "noise" since it is reasonable that errors introduced in a medium by dirt particles will show up as spurious "noise." But, even assuming such "noise," we are unconvinced that such noise is identified in a "first portion" of a video frame. Lawlor simply says nothing about detecting errors in only a first portion of a video frame and then replacing the first portion of the video frame with a second portion of the video frame.

As shown in Figure 10 of Lawlor, if a data element 585 in a current frame is corrupted, and certain tests are met, this corrupted element is concealed by substituting therefor a value interpolated from an element 575 in a previous frame and an element 595 in a subsequent frame. Thus, any replacement of a corrupted element, or "noise," is a replacement of an element in

a frame with an element calculated to be an interpolation between two elements, one of a previous frame and one of a subsequent frame. However, there is no replacement of a first portion of a video frame with a second portion of that same video frame, as required by the instant claims.

The description of Figure 12a, at column 14, lines 25 et seq. reveals a technique for spatial concealment wherein a replacement value for a corrupted element is interpolated from surrounding error-free elements in the same sub-band. This might be a fair teaching of replacing a first portion with a second portion, as claimed, if it was clear that Lawlor is dealing with a video frame here.


If the examiner is somehow relying on Lawlor's surrounding elements as portions of the same video frame, we agree with appellants (principal brief-page 14) that "Lawlor does not disclose analyzing two portions of a video frame with two different adjacent portions to obtain two different results. In this regard, the Examiner contends that both of these claimed elements are met by a current element and surrounding elements...these surrounding elements are sub-band components of the same frequency, and not adjacent portions of a video frame."

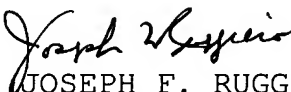
Since it is not clear, from Lawlor, that these surrounding elements are, indeed, adjacent portions of a video frame, with appellants arguing that they are not, and the examiner ostensibly taking the opposite approach, we cannot sustain the examiner's rejection of claims 1-33 under 35 U.S.C. § 102(b)/103, since to do so would involve speculation as to whether these surrounding elements are adjacent portions of a video frame. Clearly, when discussing Figures 10 and 11, Lawlor discusses replacement values regarding frame concealment and differences between corresponding elements in previous, subsequent and current "frames." But, when discussing Figures 12 and 14, Lawlor only mentions "spatial frequency range" of sub-bands containing corrupted elements and "spatial concealment" employing interpolation from surrounding error-free elements "in the same sub-band..." (Column 14, line 29). Nothing in the description of Figures 12 and 14 indicates that these surrounding elements are adjacent portions of a video frame.

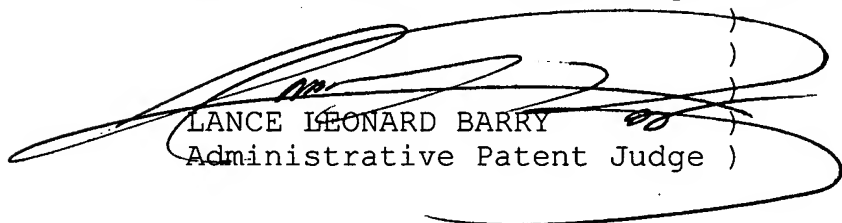
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Accordingly, the examiner's decision rejecting claims 1-11, 13, 14, and 16-32 under 35 U.S.C. § 102(b) and claims 12, 15, and 33 under 35 U.S.C. § 103, is reversed.

REVERSED


ERROL A. KRASS)
Administrative Patent Judge)


JOSEPH F. RUGGIERO) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
INTERFERENCES


LANCE LEONARD BARRY)
Administrative Patent Judge)

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